

The invention claimed is:

1. A method of producing labeled cartons comprising the steps of:
receiving customer supplied information including product information to be printed on
a label, such information including label graphics and printing;
converting the received customer information into a digital format for use by a digital
5 printing press;
printing labels in a shape conforming to cartons onto which the labels are to be applied
using a web of continuous print stock in a digital printing press;
die cutting individual labels from the printed web stock;
stacking the labels for subsequent processing;
10 supplying cartons to be labeled;
applying an adhesive to one of a side of each label opposite the printed side and a side
of a carton to be labeled; and
laminating the label to the carton by pressing the label and corresponding carton in
indexed relationship.
2. The method defined in claim 1 and further including coating the printed surface of the
label with a protective coating.
3. The method defined in claim 2 wherein said coating step comprises varnishing the
printed surface of said label.
4. The method defined in claim 3 further including the step of smoothing the label and
carton for removing air bubbles between the label and carton subsequent to the laminating step.
5. The method defined in claim 4 and further including the step of stacking the labeled
cartons for subsequent transfer to a customer.
6. The method defined in claim 1 wherein adhesive is applied to the label.

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7. The method as defined in claim 6 wherein the laminating step includes placing the carton over the label and pressing the carton downwardly onto the label.
8. The method defined in claim 1 wherein the customer identification information further includes the customer name and address, the number of labeled cartons to be provided, and the delivery date for the labeled cartons.
9. The method as defined in claim 8 wherein the printing facility includes a database for storing customer information including order information, and upon receipt of an individual order, correlates individual order information against the stored customer order information for filling the individual order.
10. The method as defined in claim 1 wherein the receiving step includes receiving customer information through an internet connection.
11. An apparatus for printing labels and subsequently laminating labels to a carton wherein the labels have a precut size matching that of the carton to which they are applied comprising:
 - a computer including a microprocessor and a graphics program for laying out label sizes, shapes, and graphic information to be contained on the label and providing an output digital file corresponding to such information;
 - a digital printer for receiving said output file from said computer with a microprocessor and printing a plurality of labels identified by said output file on continuous web stock;
 - a cutting machine for receiving the web stock and cutting and stacking individual labels therefrom; and
- 10 a laminating machine for applying an adhesive to one side of each label opposite the printed side and carton and laminating the label onto a carton in indexed relationship to the carton.
12. The apparatus defined in claim 11 wherein the cartons are fiberboard cartons having a thickness greater than 18 points.

13. The apparatus defined in claim 11 wherein said adhesive is applied to the label.
14. The apparatus defined in claim 13 wherein said adhesive is a hot melt glue.
15. The apparatus defined in claim 14 wherein said cutting machine includes a coating apparatus for coating the printed side of each label with a protective layer.
16. The apparatus defined in claim 15 wherein said protective layer is a varnish.
17. A method of producing custom labeled cartons comprising the steps of:
receiving digital data representing customer information including label graphics and printing to be printed on a package label;
confirming that the received customer information is in a digital format suitable for use by a digital printing press and converting such received information to a suitable digital format when required;
digitally printing labels in a shape conforming to cartons onto which the labels are to be applied on a web of continuous print stock employing a digital printing press;
cutting and singulating individual labels from the printed web stock;
applying an adhesive to a side of each label opposite the printed side; and
laminating the label and carton by pressing the label and corresponding individual carton in indexed relationship to each other.
18. The method defined in claim 17 and including the additional step of smoothing the label and carton for removing air bubbles between the label and carton subsequent to the laminating step.
19. The method defined in claim 18 and further including coating the printed surface of the label with a protective coating.
20. The method defined in claim 19 wherein said coating step comprises varnishing the printed surface of said label.

21. The method defined in claim 20 and further including stacking the labeled cartons for subsequent transfer to a customer.

22. The method defined in claim 17 and further including comparing the information received from the customer with a database pertaining to customer information for controlling individual printing runs according to customer orders.

23. A labeled carton made by the process of claim 17.

24. An apparatus for forming, printing, and laminating labels having a predetermined size and shape corresponding to cartons comprising:

a computer including a microprocessor and a graphics program for laying out label sizes, shapes, and graphic information to be contained on the label and providing an output digital file corresponding to such information;

a digital printer for receiving said output file from said computer and printing a plurality of labels identified by said output file on continuous web stock at a rate of up to about 48 feet per minute;

a finishing machine for receiving the web stock, coating the printed side of the label, and cutting and singulating individual labels therefrom;

an adhesive application station for applying an adhesive to the carton facing side of each label;

a laminating station for aligning each label in indexed relationship to a carton and pressing the label and carton together to apply the label to the carton;

a smoothing station comprising a rotary press for removing air bubbles between a label and a carton; and

a stacking station for stacking labeled cartons.

25. The apparatus defined in claim 24 wherein the finishing machine includes a pair of rotary dies for cutting individual labels from the web stock.

26. A method of digitally controlling the production of custom labeled cartons comprising the steps of:

receiving digital data representing customer information including label graphics and printing to be printed on a package label;

5 converting the received customer information into a digital format for use by a digital printing press;

digitally printing labels in a shape conforming to cartons onto which the labels are to be applied;

cutting and singulating individual labels;

10 applying an adhesive to a side of each label opposite the printed side; and

laminating the label and carton by pressing the label and corresponding individual carton in indexed relationship to each other.

27. The method defined in claim 26 and further including varnishing the printed surface of said label prior to the pressing step.

28. The method defined in claim 27 and including the additional step of smoothing the label and carton for removing air bubbles between the label and carton subsequent to the laminating step.

29. A high speed digitally controlled apparatus for forming, printing, and laminating custom labels having a predetermined size and shape corresponding to cartons comprising:

a computer having a microprocessor and a graphics program for laying out label sizes, shapes, and graphic information to be contained on the label and providing an output digital
5 file corresponding to such information;

a digital printer for receiving said output file from said computer and printing a plurality of labels identified by said output file on print stock;

a finishing machine for receiving the print stock, coating the printed side of the label, and cutting and singulating individual labels;

10 an adhesive application station for applying an adhesive to the carton facing side of each label;

a laminating station for aligning each label in indexed relationship to a carton and pressing the label and carton together to apply the label to the carton;

15 a smoothing station comprising a rotary press for removing air bubbles between a label and a carton; and

a stacking station for stacking labeled cartons.

30. The apparatus defined in claim 29 wherein the finishing machine includes a pair of rotary dies for cutting individual labels from the print stock.

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